

1 CLAIMS

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3 1. A speech recognition system comprising:
4 a speech recognition engine to recognize an utterance, the speech
5 recognition engine being configured to actively listen for the utterance for a
6 predetermined response time; and
7 a user interface to provide visual and auditory feedback indicating whether
8 the speech recognition engine recognizes the utterance, the user interface being
9 configured to play an audible sound indicating recognition of the utterance and to
10 display a countdown graphic that changes with lapsing of the response time.

11 2. A speech recognition system as recited in claim 1, wherein the user
12 interface restarts the countdown graphic in the event the speech recognition engine
13 recognizes the utterance.

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15 3. A speech recognition system as recited in claim 1, wherein the
16 response time is configurable.

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18 4. A speech recognition system as recited in claim 1, wherein the user
19 interface displays visual elements in a first color and briefly changes to a second
20 color in the event the speech recognition engine recognizes the utterance.

21
22 5. A speech recognition system as recited in claim 1, wherein the
23 countdown graphic comprises a progress bar that shortens as the response time
24 diminishes.

1 6. A speech recognition system as recited in claim 1, wherein the user
2 interface plays another audible sound when the response time has elapsed.

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4 7. A speech recognition system as recited in claim 1, wherein the speech
5 recognition engine is initially in a sleep mode and is awakened to an active mode
6 upon detection of a starter utterance, the user interface plays another audible sound
7 indicating that the speech recognition engine is in the active mode in the event the
8 speech recognition engine recognizes the starter utterance.

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10 8. A speech recognition system as recited in claim 1, wherein the speech
11 recognition engine is initially in a sleep mode and is awakened to an active mode
12 upon depression of a button, the user interface plays another audible sound
13 indicating that the speech recognition engine is in the active mode in the event the
14 speech recognition engine recognizes the starter utterance.

15
16 9. A speech recognition system comprising:
17 an application;
18 a vocabulary accessible by the application, the vocabulary holding a set of
19 utterances applicable to the application;
20 a grammar that holds a subset of the utterances in the vocabulary;
21 a speech recognition engine to recognize the utterances in the grammar
22 within a predetermined response time; and
23 a user interface to display a countdown graphic that changes with lapsing of
24 the response time.
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1 **10.** A speech recognition system as recited in claim 9, wherein the user
2 interface restarts the countdown graphic in the event the speech recognition engine
3 recognizes the one of the utterances.

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5 **11.** A speech recognition system as recited in claim 9, wherein the user
6 interface displays visual elements in a first color and briefly changes to a second
7 color in the event the speech recognition engine recognizes one of the utterances.

8
9 **12.** A speech recognition system as recited in claim 9, wherein the
10 countdown graphic comprises a progress bar that shortens as the response time
11 diminishes.

12
13 **13.** A speech recognition system as recited in claim 9, wherein the user
14 interface plays an audible sound when the speech recognition engine recognizes
15 one of the utterances within the predetermine response time.

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17 **14.** A speech recognition system as recited in claim 9, wherein the user
18 interface plays an audible sound when the response time has elapsed.

19
20 **15.** A speech recognition system as recited in claim 9, wherein the
21 speech recognition engine is initially in a sleep mode and is awakened to an active
22 mode upon detection of a starter utterance, the user interface plays another audible
23 sound indicating that the speech recognition engine is in the active mode in the
24 event the speech recognition engine recognizes the starter utterance.

1 **16.** An entertainment system incorporating the speech recognition
2 system as recited in claim 9.

3
4 **17.** A computing device incorporating the speech recognition system as
5 recited in claim 9.

6
7 **18.** A user interface for an speech recognition system, the user interface
8 comprising:

9 a display; and

10 a graphic progress bar shown on the display that indicates a response time
11 in which the speech recognition system is awaiting a user to speak, the progress
12 bar shortening with passage of the response time.

13
14 **19.** A user interface as recited in claim 18, wherein the graphic progress
15 bar is lengthened to its initial position after each recognized user input.

16
17 **20.** A user interface as recited in claim 18, wherein the graphic progress
18 bar briefly changes color when a user input is recognized.

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20 **21.** A speech recognition system incorporating the user interface as
21 recited in claim 18.

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23 **22.** A computing device incorporating the user interface as recited in
24 claim 18.

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23. A user interface for an speech recognition system, the user interface comprising:

- a display;
- an audio input to receive audible utterances;
- a graphic shown on the display that indicates a response time in which the speech recognition system is awaiting receipt of an utterance via the audio input;
- and
- an audio generator to emit an audible sound when the speech recognition system recognizes the utterance.

24. A user interface as recited in claim 23, wherein the audio generator emits a second audible sound when the speech recognition system fails to recognize the utterance within the response time.

25. A speech recognition system incorporating the user interface as recited in claim 23.

26. A computing device incorporating the user interface as recited in claim 23.

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27. A vehicle computer system comprising:

- a computer;
- an open platform operating system executing on the computer, the operating system being configured to support multiple applications; and

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1 a speech recognition system to detect utterances used to control at least one
2 of the applications running on the computer, the speech recognition system having
3 a user interface to provide visual and auditory feedback indicating whether an
4 utterance is recognized, the user interface being configured to play an audible
5 sound indicating recognition of the utterance and to display a graphic that changes
6 with passage of the response time.

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8 **28.** A vehicle computer system as recited in claim 27, wherein the user
9 interface restarts the graphic in the event the utterance is recognized.

10
11 **29.** A vehicle computer system as recited in claim 27, wherein the user
12 interface displays visual elements in a first color and briefly changes to a second
13 color in the event the utterance is recognized.

14
15 **30.** A vehicle computer system as recited in claim 27, wherein the
16 graphic comprises a progress bar that shortens as the response time passes.

17
18 **31.** A vehicle computer system as recited in claim 27, wherein the user
19 interface plays another audible sound when the response time has elapsed.

1 **32.** A vehicle computer system as recited in claim 27, wherein the
2 speech recognition system is initially in a sleep mode and is awakened to an active
3 mode upon detection of a starter utterance, the user interface plays another audible
4 sound indicating that the speech recognition system is in the active mode in the
5 event the starter utterance is recognized.

6
7 **33.** A collaboration system involving multiple interconnected devices
8 comprising:

9 a voice input mechanism resident at each of the devices;
10 an audio output system resident at each of the devices; and
11 a user interface to provide visual and auditory feedback indicating when a
12 party located at one of the devices can speak, the user interface being configured
13 to play an audible sound when the party can begin speaking and to display a
14 graphic that changes with lapsing of time to indicate a duration that the party can
15 speak.

16
17 **34.** A method for operating a speech recognition system, comprising the
18 following steps:

19 initiating a response time in which to receive an audible utterance;
20 displaying a graphic representing the response time; and
21 changing the graphic to indicate passage of the response time.

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1 **35.** A method as recited in claim 34, wherein the displaying and
2 changing steps comprise the steps of depicting a progress bar and shortening the
3 progress bar as the response time passes.

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5 **36.** A method as recited in claim 34, further comprising the step of
6 resetting the graphic when an audible utterance is recognized.

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8 **37.** A method as recited in claim 34, further comprising the step of
9 changing a color of the graphic when an audible utterance is recognized.

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11 **38.** A method as recited in claim 34, further comprising the step of
12 playing a sound when an audible utterance is recognized.

13
14 **39.** A method as recited in claim 34, further comprising the step of
15 playing a sound when no audible utterance is recognized within the response time.